

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Washington Regional Office
County: Lenoir
NC Facility ID: 5400187
Inspector's Name: Kurt Tidd
Date of Last Inspection: 04/17/2019
Compliance Code: 3 / Compliance - inspection

Facility Data Applicant (Facility's Name): MasterBrand Cabinets, Inc. - Kinston Plant #9 Facility Address: MasterBrand Cabinets, Inc. - Kinston Plant #9 651 Collier-Loftin Road Kinston, NC 28504 SIC: 2434 / Wood Kitchen Cabinets NAICS: 33711 / Wood Kitchen Cabinet and Countertop Manufacturing Facility Classification: Before: Title V After: Fee Classification: Before: Title V After:				Permit Applicability (this application only) SIP: No new regulations NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:			
Contact Data				Application Data			
Facility Contact George Lemerise General Mgr, Kinston Ops (252) 559-2223 651 Collier Loftin Road Kinston, NC 28504	Authorized Contact George Lemerise General Mgr, Kinston Ops (252) 559-2223 651 Collier Loftin Road Kinston, NC 28504	Technical Contact Suchismita Bose Environmental Manager (812) 631-7761 540 Lake Cook Road Deerfield, IL 60015	Application Number: 5400187.20A Date Received: 04/14/2020 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 08804/T12 Existing Permit Issue Date: 12/12/2017 Existing Permit Expiration Date: 11/30/2022				
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2018	0.5300	3.65	248.91	0.7900	7.09	21.50	9.26 [Xylene (mixed isomers)]
2017	0.4300	3.09	266.89	0.6700	8.87	25.40	9.90 [Xylene (mixed isomers)]
2016	0.1300	1.31	264.04	0.2500	7.42	21.76	8.31 [Xylene (mixed isomers)]
2015	---	0.4400	266.61	0.0600	7.01	23.19	9.05 [Xylene (mixed isomers)]
2014	0.3300	1.51	233.97	0.5100	6.42	15.92	6.30 [Xylene (mixed isomers)]
Review Engineer: Urva Patel Review Engineer's Signature:					Comments / Recommendations: Issue 08804/T13 Permit Issue Date: Permit Expiration Date:		

1. Purpose of Application:

Currently, MasterBrand Cabinets, Inc. – Kinston Plant # 9 holds Title V Permit No. 08804T12 with an expiration date of November 30, 2022. The TV- Significant permit application (**Application No. 5400187.20A**) was received on April 14, 2020. The facility is requesting to modify the basis for the PM emission limits consistent with the increased control efficiencies of the filters associated with the current spray booths associated with the conventional cabinet finishing operations (ID No. CF1) and the high volume line cabinet finishing operations (ID No. CF2).

2. Facility Description:

The MasterBrand Cabinets, Inc. – Kinston Plant # 9 located in Kinston, Lenoir County, North Carolina. (Standard Industrial Classification [SIC] Code 2434 – wood kitchen cabinets) is a facility which produces wood cabinets. MasterBrand Cabinets, Inc. (MBCI) receives unfinished, pre-cut wood products (particle board, Hickory, Maple, Oak, Cherry, etc., but no pine) and produces fine cabinets. All their products are purchased by special order. The facility operates typically with one shift (8-11 hours), 5-6 days per week. Roughly 90% of the time they operate five days per week as opposed to six. They have a cutting area where the pieces are made, and painting/coating areas where the pieces are hung on racks and travel throughout the facility through a series of spray booths and ovens.

3. Application Chronology:

Application Chronology

April 14, 2020	Received application for Title V – minor modification. NC DAQ Permitting determined that the request contravened an existing permit condition and therefore had to be processed as a one-step Significant application.
April 14, 2020	Sent acknowledgement letter indicating that the application for TV - Significant permit was complete.
July 10, 2020	Conference call with facility representatives to discuss the purpose of the application, the emission calculations (pre and post modification), and final language of PSD avoidance condition.

4. Summary of Changes to the Existing Permit (Permit No. 08804T12):

Page No.	Section	Description of Changes
Cover Letter	N/A	<ul style="list-style-type: none">Update cover letter for application number, permit numbers, dates, fee class, PSD increment statement and Chief name.Revised facility and technical contact.
Permit Cover	N/A	<ul style="list-style-type: none">Insert new issuance, complete application date and application number.
17	2.2 A.1.d	<ul style="list-style-type: none">Revised permit condition to ensure compliance – pounds of coating solids applied value
Cover and throughout	Cover and throughout	<ul style="list-style-type: none">Updated regulation references from “2D” and “2Q” to “02D” and “02Q” to be consistent with regulation nomenclatures.

5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on April 22, 2019, Kurt Tidd of the Washington Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted with Application No. 5400187.20A on April 14, 2020.

Five-year Compliance History:

- The facility was inspected on April 17, 2019 and appeared to be in compliance with all applicable air quality regulations.
- November 21, 2018, Notice of Violation was issued. The Permittee failed to perform monitoring requirements (record pressure drop and catalyst inlet temperature for twenty-six hours) for the Peak Shaving generator as per the required reporting information of NESHAP ZZZZ.
- The facility was inspected on June 27, 2018 and appeared to be in compliance with all applicable air quality regulations.
- February 6, 2018, Notice of Deficiency was issued. The Permittee failed to perform monitoring requirements (record data for 50 hours – 4 hour rolling average temperature and monthly average pressure drop) for the Peak Shaving generator as per the required reporting information of NESHAP ZZZZ.
- A Notice of Violation was issued on June 30, 2017 because the Permittee missed conducting the periodic performance testing required under 40 CFR 63, Subpart ZZZZ for the peak shaving generator.
- The facility was inspected on June 15, 2017 and appeared to be in compliance with all applicable air quality regulations.
- May 18, 2017, Notice of Deficiency was issued due to late CAM report. The CAM report was received May 17, 2017 and was due by April 30, 2017. All reports were reviewed, approved, and the situation was resolved.
- The facility was inspected on September 13, 2016 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on September 16, 2015 and appeared to be in compliance with all applicable air quality regulations.

6. New/Modified Equipment/Changes in Emissions:

This application was originally submitted as a Title V – Minor Modification. However, because the applicant is requesting a change to a specific term or condition in Section 2.2 A.1.a to modify the basis for the particulate emissions limits, the application is being processed as a Title V - Significant modification. The facility is requesting to change their Title V Operating Permit to account for new dry filters put into service in their surface coating spray booths. Specifically, permit condition 2.2 A.1.a is being modified to change the basis for the particulate emission limits consistent with the increased efficiency of the new filters. This application outlines the history of air permitting of these surface coating booths and presents information on the new filters installed in the booths (including vendor guarantees of control efficiencies).

MasterBrand-Kinston has installed new, higher efficiency filters on all of the dry-filter spray booths at the facility. These filters allow for higher removal of overspray, while maintaining the airflow through the booths. The new filters remove between 98.83 and 99.87% of particulate matter. These efficiencies are considerably higher than the removal efficiency provided by the original filters that were the basis of the Title V PM/PM10 limit (~87%). These changes were previously made to the spray booths at the facility without initiating a permitting action because they did not result in an increase in emissions of a regulated pollutant. However, at this time the facility would like to take credit for these emissions reductions by modifying the current 518,846 pounds of solids applied PSD avoidance limit while keeping the existing emission standards.

Increasing the allowable solids applied is needed to accommodate higher solids content coatings required for the current product mix at the facility. The lowest efficiency of the new filters is 98.83% control and will be assumed to apply to all the filters. No other changes in the coating system were considered.

MasterBrand will continue to track coating solids to demonstrate compliance with the less than 25 tons of PM emissions per consecutive 12-month period, and less than 15 tons of PM10 emissions per consecutive 12-month period in the Title V permit (see Section 2.2 A. 1). The facility will continue to conduct weekly inspection of the spray booths' filters noting the condition; and annual inspection of the associated ductwork noting structural integrity. The facility will keep records of the results of inspection and maintenance for the spray booths and maintain these in a log (written or electronic format) on-site and made available to an authorized representative upon request. These logs will record the following:

- . the date and time of each recorded action;
- . the results of each inspection; and
- . the results of maintenance performed on any filters.

All instances of deviations from the requirements of this permit will be clearly identified, and reported to

NCDEQ annually.

Table 1 - Calculation of "Revised" Pounds of Solids Applied

Unit	Pounds of Solids Applied	Total Pounds of Solids Applied	Transfer Efficiency	Control Efficiency	PM Emission Rate (TPY)
CF1 (Current)	170,769	518,846	50%	87%	5.55
CF2 (Current)	348,077		60%	87%	9.05
CF1 (Revised)	1,897,436	5,764,957	50%	98.83%	5.55
CF2 (Revised)	3,867,521		60%	98.83%	9.05

- The transfer efficiency used is the same as what was originally established for the coating operations in prior permitting; 50% for CF1 and 60% for CF2. It should be noted that we did not seek to use improved transfer efficiency numbers to simplify the calculations; however, MasterBrand has documentation that the transfer efficiency is considerably more than what is used in the calculations. A level of conservatism (over estimation of PM emissions) is in these calculations by not seeking to change the transfer efficiency from what was used in prior permitting.
- The control efficiency of the dry filters has improved considerably since the prior permitting and was updated in the calculations. The control efficiency for both coating operations, CF1 and CF2, is 98.83%. The dry filter vendor documentation to support this level of control was submitted with the application.

Solids Applied = (Current PM Emission Rate tpy x 2000 lb/t) / [(1-control efficiency) x (1-transfer efficiency)]

For CF1:

Solids Applied = (5.55 tpy x 2000 lb/t) / [(1-0.9883) x (1-0.50)] = 1,897,436 lb/yr

For CF2:

Solids Applied = (9.05 tpy x 2000 lb/t) / [(1-0.9883) x (1-0.60)] = 3,867,521 lb/yr

The applicant notes that the modified “Solids Applied” values are much more than the facility can apply. However, for practical enforceability of the permit condition, the applicant will continue to track solids applied to indicate compliance with the emission limits which remain unchanged from the prior permitting. The project is not expected to result in an increase in the actual short- or long-term emissions, or potential short- or long-term emissions, or permitted emissions. The rolling 12-month emissions will be calculated monthly to demonstrate compliance with the permit limit.

7. Regulatory Review

Unless specifically noted, a detailed discussion of the following list of applicable permit conditions is not included as applicability status has not changed due to a result of this modification. The facility is expected to be in continued compliance.

15A NCAC 02D .0512: “Particulates from Miscellaneous Wood Products finishing Plants”

The Permittee shall not cause, allow, or permit particulate matter caused by the working, sanding, or finishing of wood to be discharged from any stack, vent, or building into the atmosphere without providing, as a minimum for its collection, adequate ductwork and properly designed collectors. In no case shall the ambient air quality standards be exceeded beyond the property line.

To ensure compliance, the Permittee shall perform inspections and maintenances: weekly inspection of spray booths filters, annual ductwork inspection, and record all inspection and maintenance results in logbook. The permit requires semiannual reporting.

15A NCAC 02Q .0317, “Avoidance Conditions” (for 15A NCAC 2D .0530, Prevention of Significant Deterioration) Please, see Section 6 and Section 8 (NSR/PSD) for more detailed discussions.

8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility is NOT subject to 40 CFR 60 (New Source Performance Standards), currently. This permit modification does not change this status.

NESHAP/MACT

This facility is classified as a major source for HAPs emissions and is subject to the National Emission Standards for Hazardous Air Pollutants, 40 CFR 63, Subpart JJ and Subpart ZZZZ for its sources and engines. The permit currently includes references to the requirements in each of the paragraphs of this Subpart. This permit modification does not affect this status.

- 40 CFR 63, Subpart JJ, National Emission Standards for Hazardous Air Pollutants for Wood Furniture Manufacturing Operations.
- 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

NSR/PSD

The facility is a PSD major facility for VOC emissions. The Permittee is subject to the following existing and modified Prevention of Significant Deterioration permit conditions:

- 15A NCAC 02D .0530, Prevention of Significant Deterioration.

Volatile organic compound (VOC) emissions from the sources (**ID Nos. SBB1 through SBB20**) shall be less than 620 tons per consecutive 12-month period. The following BACT limits apply:

Affected Sources	BACT Limit
Toner spray booths	7.17 pounds of VOC per gallon applied coating
Stain spray booths	6.39 pounds of VOC per gallon applied coating
Pre-seal spray booths	5.73 pounds of VOC per gallon applied coating
Sealer spray booths	5.73 pounds of VOC per gallon applied coating
Topcoat spray booths	5.73 pounds of VOC per gallon applied coating

The permit requires monthly VOC calculations based on material usage and VOC content as well as recordkeeping and semiannual reporting requirements. This permit modification does not affect this status.

- 15A NCAC 02Q .0317, Avoidance Conditions (for 15A NCAC 02D .0530, Prevention of Significant Deterioration).

The conventional cabinet finishing operations (**ID No. CF1**) and high-volume line cabinet finishing operations (**ID No. CF2**) are subject to this regulation. These sources shall discharge less than 25 tons of particulate matter per consecutive 12-month period and less than 15 tons of PM₁₀ per consecutive 12-month period into the atmosphere. To ensure compliance, the total weight of coating solids applied in these sources shall be less than 5,764,957 pounds per consecutive 12-month period. The permit requires monthly PM and PM₁₀ calculations based on the total volume of solids applied in each cabinet finishing line as well as recordkeeping and semiannual reporting requirements. Please, see Section 6 for detailed information on Solids applied.

The diesel fuel-fired emergency/peak shaving generator (**ID No. ES-PS**) shall discharge less than 40 tons of nitrogen oxides per consecutive 12-month period into the atmosphere. To ensure compliance, the Permittee shall calculate emissions based on hours of operation of the source (using supplied calculation). The permit requires monthly NO_x recordkeeping and semiannual reporting. This permit modification does not affect this status.

112(r)

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above applicability thresholds. This permit modification does not change this status.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all the following criteria:

- Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;
- Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source; and,
- Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The Permittee is currently subject to CAM for the below listed control devices.

Emission Source I.D. No.	Emission Source Description	Control Device I.D. No.	Control Device Description
ES-WO1 ES-WO2 ES-WO3	Woodworking operations High volume manufacturing line woodworking operations Saws	BH-1 through BH-8	Eight bag filters (5,684, 5,684, 5,648, 5,477, 4,350, 6,297, 6,297, and 6,297 square feet of filter area, respectively)

No new control devices are being proposed in this permit modification. Therefore, this permit renewal does not change this status.

9. Facility-Wide Air Toxics:

Currently, the facility is not subject to NC air toxics. No changes are required under this permit modification, and continued compliance is expected.

10. Facility Emission Review:

There are no changes in potential emissions under this permit modification. Actual emissions for 2014 through 2018 are reported in the header of this permit review.

11. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. There are no affected other state and a local program within 50 miles of the facility.

12. Other Regulatory Considerations:

- The appropriate application fee was required for this permit application.
- A Professional Engineers Seal was NOT required for this permit application.
- A zoning consistency determination was NOT required for this permit application.
- A 30-day public notice and 45-day EPA review is required for this permit application.

13. Recommendations/Conclusion:

TBD